



# GOES-R

The Nation's Next-  
Generation Geostationary  
Weather Satellites

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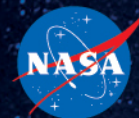
Research to Operations Panel  
2017 NOAA Satellite Conference

New York, NY  
July 17-20, 2017



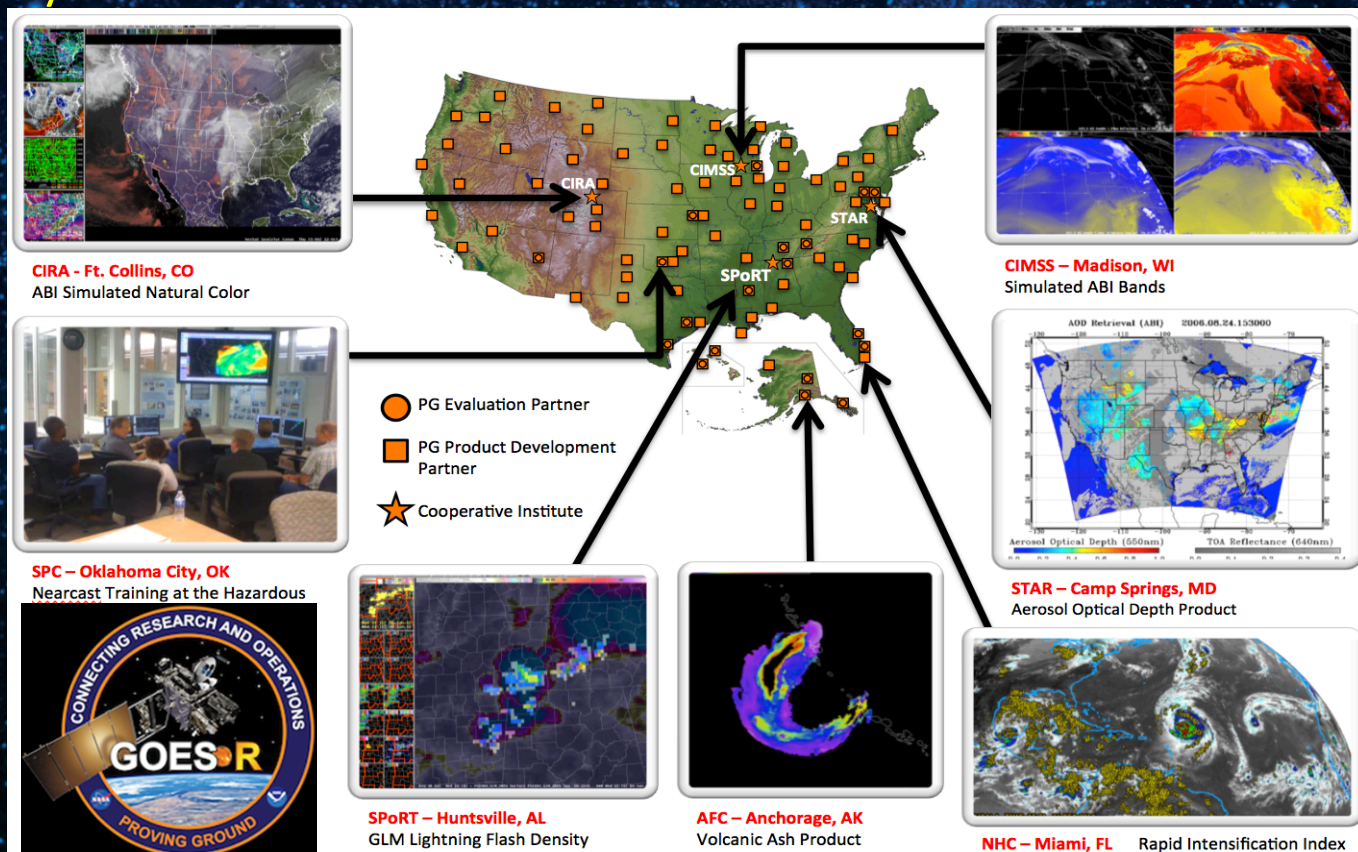


# The GOES-R Proving Ground- GRPG



- Collaborative effort between the GOES-R Program Office, selected NOAA Cooperative Institutes, NWS forecast offices, NCEP National Centers, NASA, JCSDA, and NOAA Testbeds
- User readiness testing of GOES-R baseline products and future capabilities prior to launch
  - Proxy, simulated GOES-R products tested and evaluated in an operational environment
  - Satellite Champions at NWS National Centers, Training for users, Prepare for AWIPS

## Priority Focus in 2017- Post Launch Evaluation of GOES-R ABI and GLM







# GOES-16



## L2 Science Product Validation Status

ABI L2+ Products	Beta	Prov	Full
Cloud and Moisture Imagery (CMI) and Sectorized CMI (KPP)	2/28/17	6/1/17	9/3/18
Aerosol Detection (Smoke & Dust)	5/24/17	1/26/18	9/3/18
Aerosol Optical Depth (AOD)	5/24/17	1/26/18	9/3/18
Clear Sky Mask	4/19/17	12/1/17	9/3/18
Cloud Optical Depth	6/8/17	2/23/18	9/3/18
Cloud Particle Size Distribution	6/8/17	2/23/18	9/3/18
Cloud Top Height	5/16/17	12/22/17	9/3/18
Cloud Top Phase	5/16/17	12/22/17	9/3/18
Cloud Top Pressure	5/16/17	12/22/17	9/3/18
Cloud Top Temperature	5/16/17	12/22/17	9/3/18
Derived Motion Winds	6/8/17	2/23/18	9/3/18
Derived Stability Indices	5/16/17	12/22/17	9/3/18

ABI L2+ Products	Beta	Prov	Full
Downward S/W Radiation: Surface	6/23/17	3/16/18	9/3/18
Fire/Hot Spot Characterization	5/24/17	1/26/18	9/3/18
Hurricane Intensity Estimation	9/8/17	12/1/17	9/3/18
Land Surface Temperature	5/24/17	1/26/18	9/3/18
Legacy Vertical Moisture Profile	5/16/17	12/22/17	9/3/18
Legacy Vertical Temperature Profile	5/16/17	12/22/17	9/3/18
Rainfall Rate/QPE	8/1/17	TBD	9/3/18
Reflected S/W Radiation: TOA	6/23/17	3/16/18	9/3/18
Sea Surface Temperature	6/14/17	1/26/18	9/3/18
Snow Cover	12/30/17*	3/30/18*	9/3/18*
Total Precipitable Water	5/16/17	12/22/17	9/3/18
Volcanic Ash: Detection and Height	8/1/17	2/23/18	9/3/18

Products tested in the Proving Ground focused on those used by forecasters in daily or routine operational decision-making

Validation Maturity Levels:

Not Validated

Beta Maturity

Provisional Maturity

Full Maturity

*\*Dependent upon non-baseline Albedo Product which is in development*





# Best Practices/Lessons Learned GRPG

The most successful part of the Proving Ground at the MPS - Marine and Precipitation Satellite demonstrations (OPC, WPC, SAB, TAFB) continues to be the confidence that the forecasters have gained in using and analyzing these new satellite products. For example, the **RGB Air Mass product is being used routinely at all four centers and the forecasters and analysts are mentioning its use in the official forecast products.** In addition, the **GOES-14 SRSORs and convective products have earned their way into the forecaster's routines** and the feedback usually includes the “can we ask for more SRSOR data” or “I can’t wait to see the Geostationary Lightning Mapper imagery over the oceans.” This is surely a sign that the Proving Ground efforts are having a significant impact on forecast operations at OPC, SAB, TAFB, and WPC.



ABI 30-sec meso Cordoba, Argentina

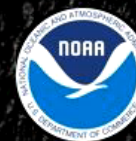
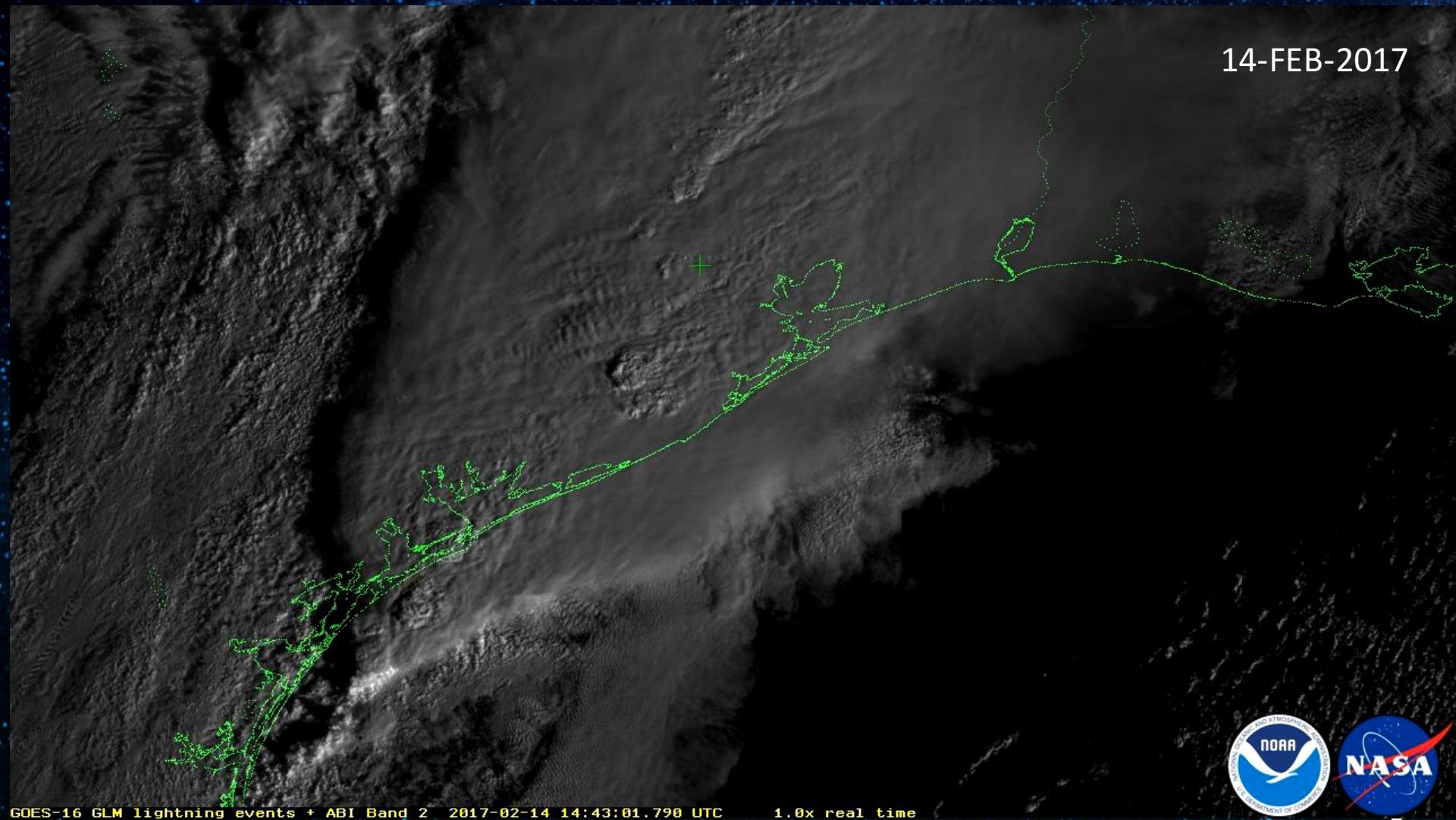




# GLM Movie of Texas Storms



14-FEB-2017

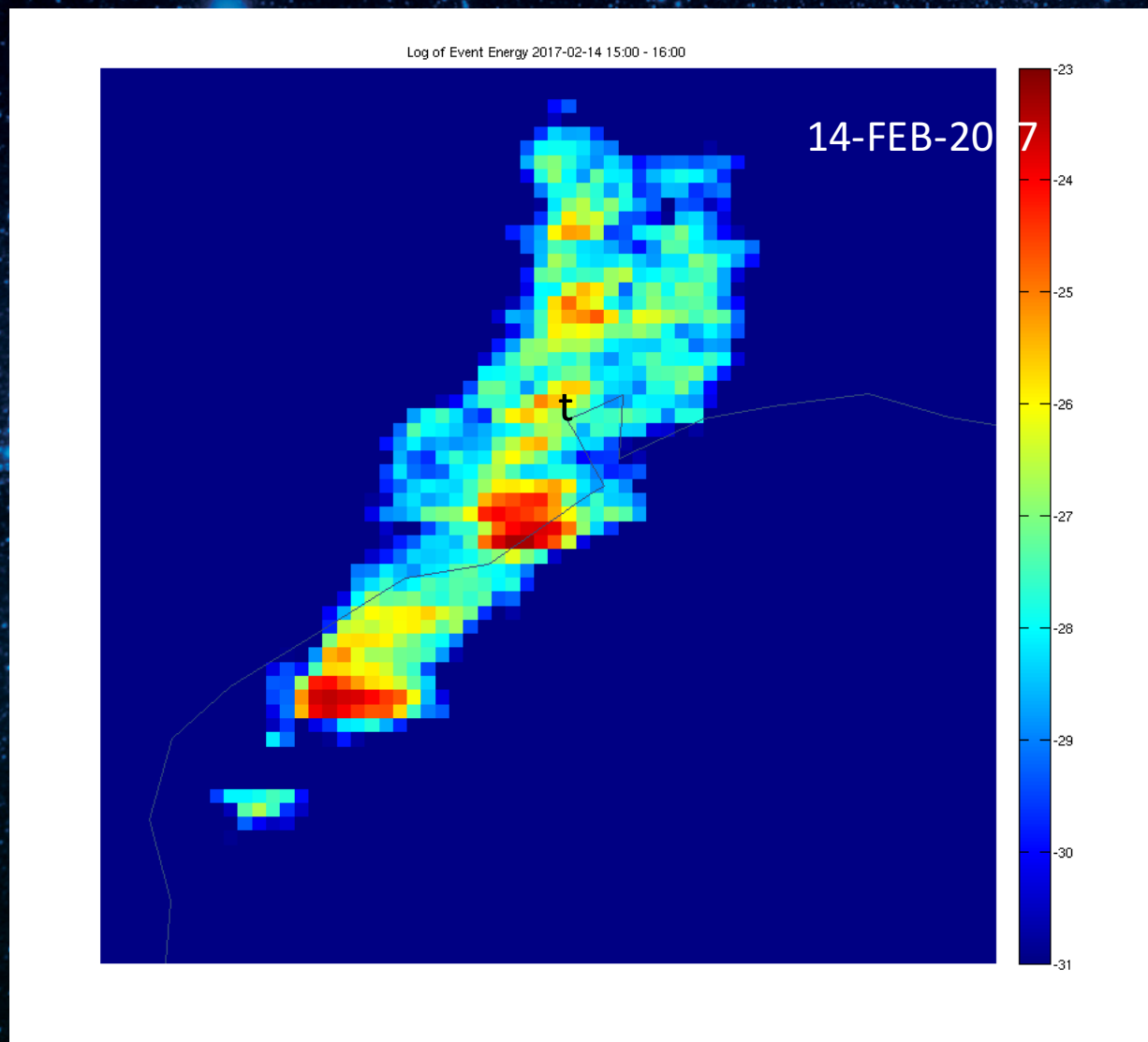


GOES-16 GLM lightning events + ABI Band 2 2017-02-14 14:43:01.790 UTC

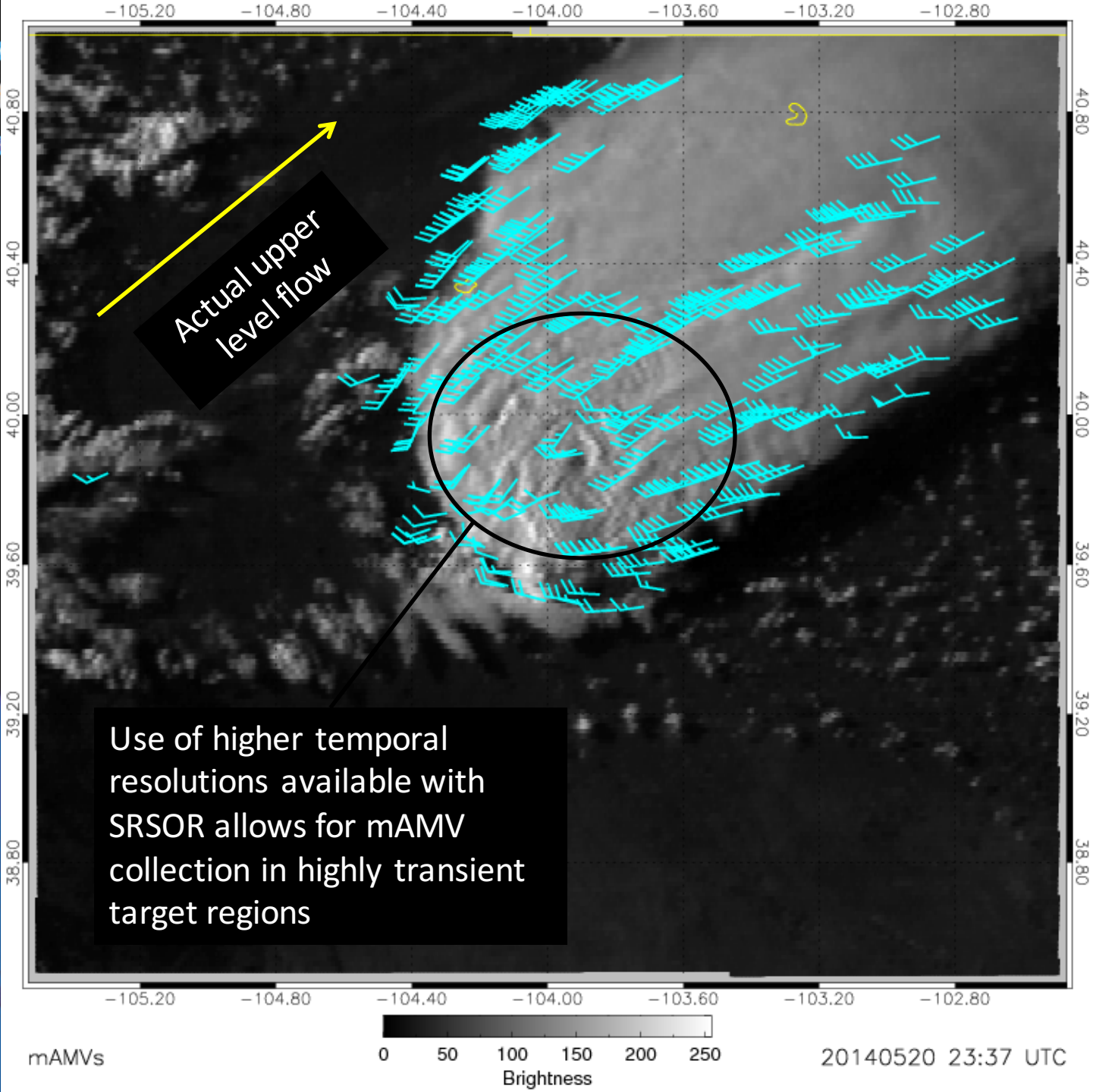
1.0x real time



# GLM 1-hour Flash Event Energy Density for Texas Storms

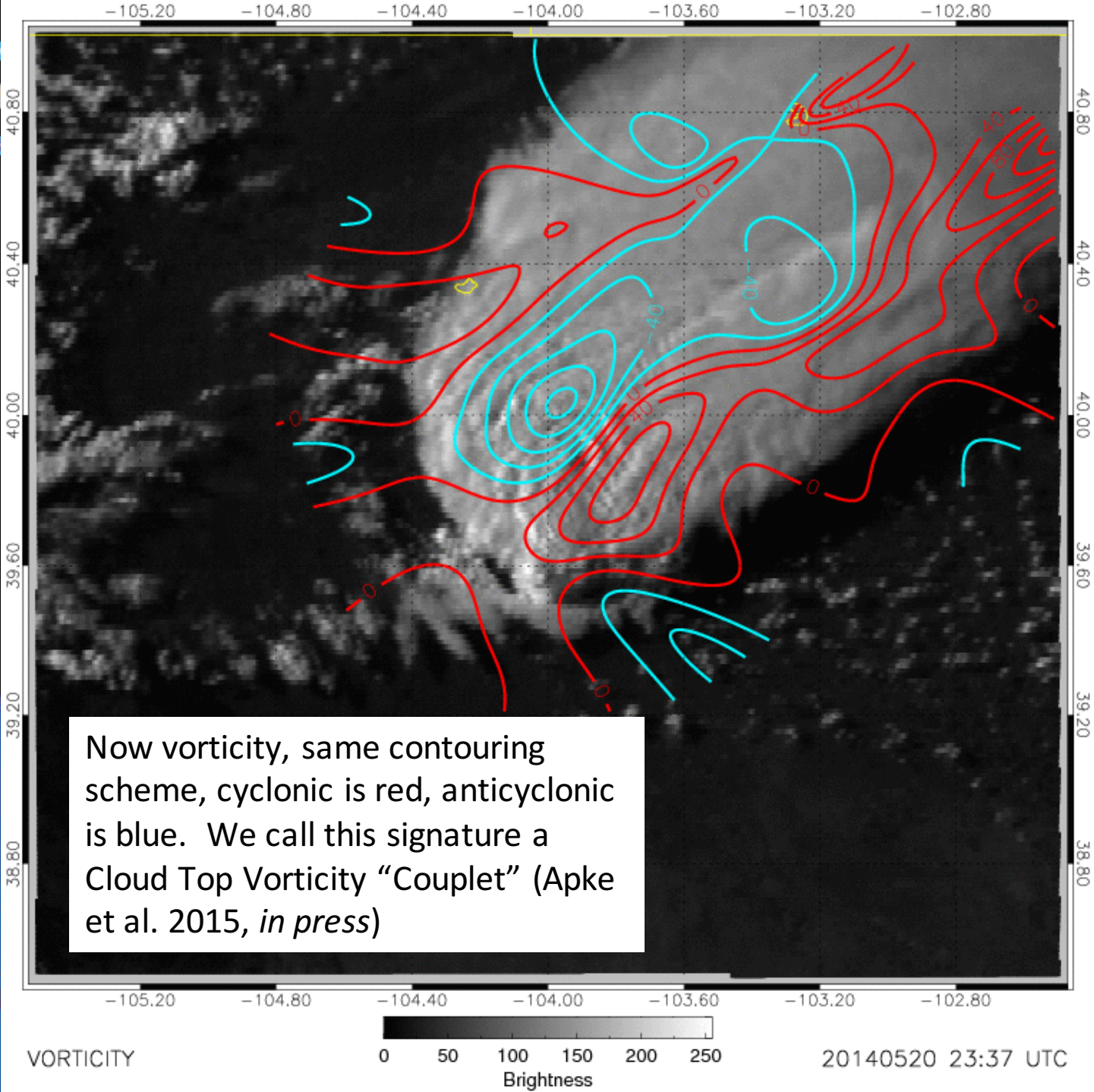






Courtesy Jason Apke



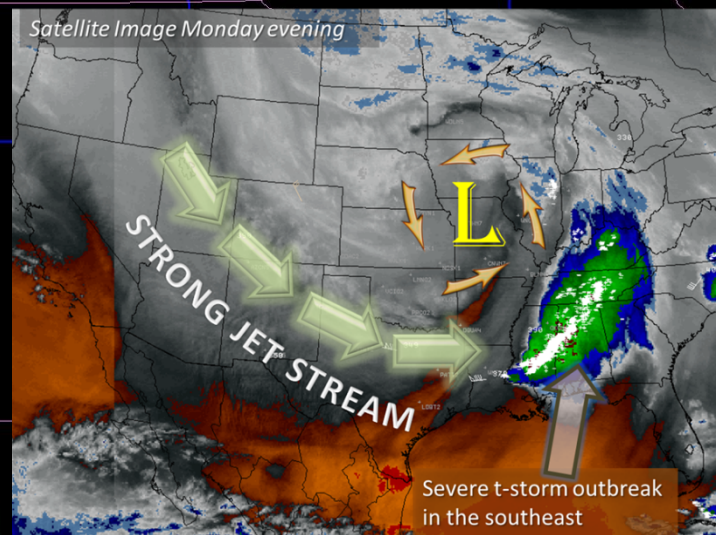
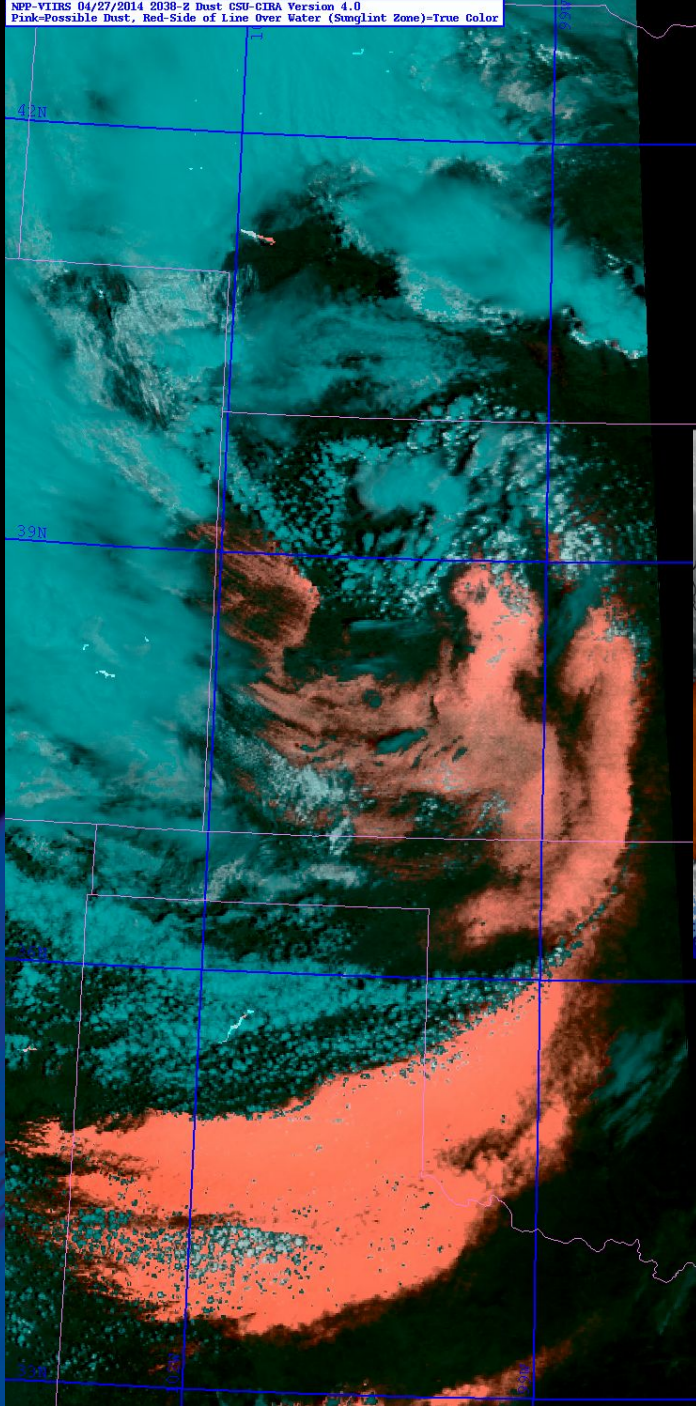






NPP-VIIRS 04/27/2014 2030-2 Dust CSU-GIRA Version 4.0  
Pink-Possible Dust, Red-Side of Line Over Water (Sunlight Zone)-True Color

# Imager: 16 Channels for Improved Feature Discrimination



Blowing Dust - Colorado  
27 April 2014 at 2038 Z

Blowing Dust courtesy of S. Miller





# GOES-R

GEOSTATIONARY OPERATIONAL ENVIRONMENTAL SATELLITE R-SERIES

The **next**  
generation of  
geostationary  
environmental  
satellites

## Thank you

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